

# DEVELOPMENT AND EFFICACY A TRIVALENT VACCINE AGAINST BACTERIAL PATHOGENS in RAINBOW TROUT, *Oncorhynchus mykiss*

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## ABSTRACT

In this study, a new trivalent vaccine was developed and evaluated the efficacy with adjuvants (Freund's Complete Adjuvant and glucan) and non-adjuvanted vaccine in rainbow trout(20g) against to pathogens; *L. garvieae*, *V. anguillarum* and *Y. ruckeri*. For this purpose, four experimental groups were formed including control. The vaccine was prepared formalin-killed bacteria and then combined with adjuvants that were given into fish by intraperitoneal injection. Control fish were received only phosphate buffered saline-PBS. A booster was applied the fish which were vaccinated with a non-adjuvanted vaccine 21 days post-injection. All the groups were challenged against three pathogens at day 30<sup>th</sup>, 90<sup>th</sup>, 120<sup>th</sup> and 270<sup>th</sup> post vaccination. The results showed that fish had a high level of protection of pathogens in the vaccinated groups up to 9 months. The level of protection was calculated by obtaining the Relative Percent Survival (RPS). RPS was determined as in the non adjuvanted plus a booster injected group: *Y.ruckeri* 96,77%, *V.anguillarum* 100%; *L.garvieae* 96,66%, Glucan: *Y.ruckeri* 93,54%; *V.anguillarum* 96,77%, *L.garvieae* 93,33 %, FCA :*Y.ruckeri* 100%, *V.anguillarum* 87,09 % , *L.garvieae* 93,33% at 270<sup>th</sup> day. The efficacy of the vaccine has been found to provide long-term protection against to three pathogens in the experimental condition.

Key Words: Rainbow trout, *Yersinia ruckeri*, *Lactococcus garvieae*, *Listonella(Vibrio) anguillarum*, vaccine, adjuvant, Long-term protection